

**SCALEABLE INTERCONNECT STRUCTURE UTILIZING
QUALITY-OF-SERVICE HANDLING**

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ABSTRACT OF THE DISCLOSURE

5 An interconnect structure and method of communicating messages on the interconnect structure assists high priority messages to travel through the interconnect structure at a faster rate than normal or low priority messages. An interconnect structure includes a plurality of nodes with a plurality of interconnect lines selectively coupling the nodes in a hierarchical multiple-level structure. Data moves from an
10 uppermost source level to a lowermost destination level. Nodes in the structure are arranged in columns and levels. Data wormholes through the structure and, in a given time-step, data always moves from one column to an adjacent column and while remaining on the same level or moving down to a lower level. When data moves down a level, an additional bit of the target output is fixed so data exiting from the
15 bottom of the structure arrives at the proper target output port.